MEDIA TREATMENT OF AN ENVIRONMENTAL PROBLEM -- DID THEY ACCURATELY REPORT THE KEY ISSUES OF CHEYENNE BOTTOMS WATERFOWL MANAGEMENT AREA, ACCORDING TO THE EXPERTS?: A CONTENT ANALYSIS OF AREA NEWSPAPERS

by

GREGORY L. DAVIS

B. S. Horticulture, Kansas State University, 1979

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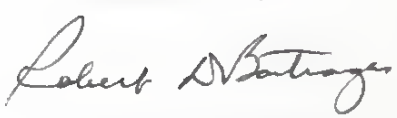
Approved by:



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Chapter 1

Purpose of the Study

In Harold Lasswell's essay, "The Structure and Function of Communication in Sooiety," he said a way to describe an act of communication is to answer these questions: Who -- says what -- in which channel -- to whom -- with what effect? This study, a content analysis, focused on the questions of "who" and "says what."

The specifio purpose of this study was to compare what was reported in area newspapers about Cheyenne Bottoms Waterfowl Management Area with what a group of experts identified as the key issues pertaining to the wetland area.

INTRODUCTION: BACKGROUND OF STUDY

Cheyenne Bottoms Waterfowl Management Area is a 64-square mile basin in Barton County, just north of Great Bend, Kansas. A recent report ("Cheyenne Bottoms: An Environmental Assessment," 1987) said core samples show that the area may have persisted as a wetland for as long as 100,000 years.

In the late 1940s and early 1950s, the Kansas Fish and Game Commission purchased 19,000 acres of the Bottoms using

money from hunters' license fees. A system of dikes and canals was built to control water levels on about 12,300 acres. The marsh was officially designated a state wildlife management area in 1957.

Because of its central location in the United States, biologists consider it one of the most important waterbird areas in the Central Flyway, according to an article in Audubon magazine ("Kansas Chapters," 1985). Waterfowl populations reach 600,000 ducks and 40,000 geese, and the area is visited by millions of shorebirds during the peak of migration. Of Kansas's 400-plus bird species, 320 have been observed at Cheyenne Bottoms.

The environmental assessment (1987) reported that endangered whooping cranes and white pelicans depend on the area as a stopping place in their migration. Other federally endangered or threatened species which depend on the area for habitat include the bald eagle, peregrine falcon, piping plover and the least tern. According to research conducted by the International Shorebird Surveys, "Cheyenne Bottoms is the single most important migration staging area known in the United States -- in the spring, 45 percent of all shorebirds in the U.S. are found only at Cheyenne Bottoms" ("Endangered Wetland," 1986, p. 1).

In recent years, the Bottoms has been too dry to support the huge flocks of birds. The marsh has never had a steady supply of water; "it has dried up two years out of three,

varying from a vast lake to miles of muddy flatland" ("Endangered Wetland," 1986, p. 1). According to a spokesperson with the Save the Cheyenne Bottoms Task Force, wildlife adjusted to these fluctuating conditions because there were other smaller wetlands and stream systems within reach. "Now," she said, "most of that alternative habitat is gone" (J. Garton, personal communication, January, 1988).

The area is dependent on an intermittent and generally decreasing supply of water. The principal water supply for the marsh is from precipitation. According to one report ("Kansas Chapters," 1985), the region averages 20-25 inches of rain annually, but reservoirs can lose 60 inches of water a summer through evaporation. Two creeks, Deception Creek and Blood Creek, are the primary streams that drain into the basin. Additional water is imported into the Bottoms through a diversion canal from the Arkansas River, and from two other small creeks. However, since 1980, because of the dwindling flow of water in the Arkansas River, Cheyenne Bottoms has received less than 10 percent of the water it is legally entitled to receive. "Greatly increased irrigation and land practices that retain rainfall have been identified by the Kansas Geological Survey as two probable causes of the river's continuing decline" ("Endangered Wetland," 1986, p. 1).

According to the environmental assessment conducted by

the Kansas Biological Survey and the Kansas Geological Survey:

> Since the late 1930s, the soil and water conservation practices of terracing, water impoundments and conservation tillage have decreased runoff. As a result of increased conservation practices, the increase in water yield brought on by agricultural activities has steadily declined and should continue this decline into the near future (1987, p. 6).

"Lack of precipitation," the report says, "does not appear to be the cause of long-term streamflow decline in the area." "Evapotranspiration," it says, "is the major water depletion process and about equals precipitation" ("Environmental Assessment," 1987, p. 6).

The University of Kansas's Institute for Public Policy and Business Research, conducted a study to determine the usage of Cheyenne Bottoms and the economic impact of the wetlands on Barton County and Kansas in 1986. Birdwatching was the number one activity with 15,567 users, followed by hunting (7,079), and environmental study (428). Economic impact on Barton County from these activities plus state expenditures (and factoring in a multiplier effect) in the area yielded a total of more than $1.6 million; impact on Kansas yielded a total of more than $2.8 million ("Environmental Assessment," 1987, p. 18).

The problems of Cheyenne Bottoms began receiving media attention in 1982. Stories about Cheyenne Bottoms appeared in magazines such as Audubon, Kansas Wildlife, and Ks! Magazine, and in newspapers such as The Kansas City Times, Topeka Capitol Journal, and The Manhattan Mercury. A grassroots campaign to "Save the Bottoms" was begun by the Kansas Audubon Council in late 1983. In September 1984, a news story (Tanner, 1984) reported about 200 hunters, birdwatchers, farmers, and representatives from the Kansas Audubon Council, Kansas Wildlife Federation, and governmental agencies met at Cheyenne Bottoms for a seminar designed to find ways to preserve the area from its dwindling water supply. An outgrowth of this meeting was an agreement to organize a plan to inform the public and the legislature about the problems of Cheyenne Bottoms.

Limitations of the Study

This study focused on newspaper content identified by experts. By doing so, it does not deal with possible issues which the newspapers might have covered and which the experts might not have identified. Also, this study is limited to one case -- Cheyenne Bottoms -- and relies on a limited number of experts.

Chapter 2

REVIEW OF LITERATURE

Presented in this chapter is a review of several related studies and published commentary about the nature of the press and its relationship with natural resources and the environment.

Much has been written about the nature of and responsibilities of mass media. The three broad normative theories of the press reveal some views of those responsibilities: authoritarian theory, in which truth is restricted and the thought approved by the state becomes the standard for everyone; libertarian theory, in which a free market place for ideas was urged; and what Siebert, Peterson, and Schramm (1956, cited in Hynds, 1980) called social responsibility theory, a modification of libertarian theory with an emphasis on responsibility for the good of society.

Many authors have attempted to define what it means to have a free and responsible press. A general outline titled A Free and Responsible Press, published by the Commission on Freedom of the Press in 1947 (Hynds, 1980) suggested five ideal demands of society for the communication of news and ideas. These are:

> 1) a truthful, comprehensive, and intelligent account of the day's events in a context which gives them meaning; 2) a forum for the exchange of comment

and criticism; 3) the projection of a representative picture of the constituent groups in the society; 4) the presentation and clarification of the goals and values of society; 5) full access to the day's intelligence (A Free and Responsible Press, cited in Hynds, 1980, p. 28-29).

Deciding What Is News

Editors have long used certain criteria for deciding whether a story is to be used, how much of it to use, and where it is to appear in the newspaper. These criteria for consideration include: "audience, impact, proximity, timeliness, prominence, oddity, and conflict," (Baskette, Sissors, & Brooks, 1986, p. 24.)

Harold Lasswell (1948) identified three basic functions of communications: 1) The surveillance of the environment; 2) the correlation of the parts of society in responding to the environment; 3) the transmission of the social heritage from one generation to the next.

Lasswell wrote that the function of editors, censors, and propagandists is a function of message controlling. These controllers are manipulators who typically modify content of messages.

"In gauging the efficiency of communication," Lasswell wrote, "it is necessary to take into account the values at stake, and the identity of the group whose position is being examined" (Lasswell, 1948, p. 51). He suggested it

is possible not only to establish a list of values current in any group chosen for investigation, but also to discover the rank order in which those values are sought. "We can rank the members of the group according to their position in relation to the values," he wrote (Lasswell, 1948, p. 44).

But communication of information is rarely, if ever, perfect. Among the obstacles to efficient communication, according to Lasswell, are ignorance and the reporting of irrelevant or distorted information. He wrote:

> Ignorance here means the absence, at a given point in the process of communication, of knowledge which is available elsewhere in society. Lacking proper training, the personnel engaged in gathering and disseminating intelligence is continually misconstruing or overlooking the facts, if we define the facts as what the objective, trained observer could find (Lasswell, 1948, p. 47).

Gatekeeping

Wilbur Schramm (1949) once wrote:

> (N)o aspect of communication is so impressive as the enormous number of choices and discards which have to be made between the formation of the symbol in the mind of the communicator, and the appearance of a related symbol in the mind of the receiver (Schramm,

cited in White, 1950, p. 383).

White (1950) applied this idea and Kurt Lewin's term "gatekeeper" to a case study in the selection of news. He found through studying an editor's overt reasons for rejecting news stories from press associations how subjective the communication of news is based on the gatekeeper's own set of experiences, attitudes, and expectations.

Brown (1979) reassessed the gatekeeper theory, however, and found a clear indication that gatekeeping mirrors perceptions of society. His study, which was limited to a single topic, supported Lewin's theory that the space of free movement (of the gatekeeper) is constrained by his perception of the rules of the environment in which he is located, by social forces, and by psychological factors. This, Brown wrote, "sets a condition of understanding the rules and social forces as prerequisite to determining boundary conditions." He found gatekeeper decisions, while made subjectively, are closely attuned to audience interests and the environment which sparks those interests "rather than being largely a product of random pressures of the publication process" (Brown, 1979, p. 679).

Agenda-setting

McCombs and Shaw (1972) found evidence to support the hypothesis that in choosing and displaying news, the media may set the agenda, thus determining the important issues.

To investigate the agenda-setting function of the media in the 1968 presidential campaign, their study attempted to match what voters said were the key issues of the campaign with the actual content of the mass media used by them during the campaign. Their study assumed most of the information voters have is relayed from the media; " . . . for most, mass media provide the best -- and only -- easily available approximation of ever-changing political realities" (McCombs & Shaw, 1972, p. 185).

Media and the Environment

Journalism professor and environmental educator Clay Schoenfeld (1979) explored the history of environmental communications and reported the significance of Earth Day, April 22, 1970, as a rallying point for environmental news. However, he wrote:

> Environmental communications did not spring to full flower overnight on Earth Day . . . . Their roots are old and varied: nature writing; outdoor recreation and travel writing; science writing, including medical and agricultural journalism; public affairs reporting; and the modes and methods of persuasion (Schoenfeld, 1979, p. 43).

Schoenfeld (1980, p. 31) wrote, however, "Prior to 1969-1970, newspapers were slow to play much part in recognizing 'environmentalism'." He described how newspapers largely

overlooked the evolution and eventual passage of the National Environmental Policy Act (NEPA) in 1969, "by any environmental standards a 'landmark' piece of federal legislation." He wrote:

> The 1969 National Environmental Policy Act, requiring environmental impact assessments on all major federally funded projects created a "hook" on which to hang environmental reporting, and vastly increased the quantity and quality of newspaper coverage of the environmental beat (Schoenfeld, 1979, p. 45).

Paul Rock (1973) wrote, "The world is not arranged for reporting purposes," which is the case, he wrote, with environmental issues (Rock, cited in Schoenfeld, 1980, p. 33). Barry Commoner (1972) once wrote what he called the four fundamental "laws" of ecology, which have served as reference points for environmental communicators: Everything is connected to everything else; everything must go somewhere; nature knows best; and there's no such thing as a free lunch. Schoenfeld said it is hard to uncover these "laws" in news stories, and called environmental communications a "journalism of uncertainty." He wrote the reporter "is caught between the rock of newsroom perceptions of what is 'news' and the hard place of what he believes to be environmental reality" (Schoenfeld, 1980, p. 33).

Afghanistanism

Hungerford and Lemert (1973) suggested if the media were slow to discover the deterioration of the environment, researchers also have been slow to study media treatment of environmental news. They searched for and found evidence of a growing tendency of "Afghanistanism" in the press in environmental coverage. Afghanistanism is a term an editor used in 1948 to suggest a willingness to discuss distant problems while ingoring more local ones.

Shift in Coverage

Since 1969, some researchers have documented changes in both quantity and quality of environmental coverage. Schoenfeld (1980) found, for example, editorials on environmental issues were common by 1971. And O'Meara (1978) sampled the column inches of environmental coverage in issues of the New York Times, adjusted for changes in the "news hole," and found an increase from 119 inches in 1962 to 1259 in 1970. For the Chicago Tribune the comparable figures were: 1969, 70; 1970, 1036 (O'Meara, cited in Schoenfeld, 1980).

Howenstine's (1986) content analysis of environmental reporting from 1970-1982 found a general shift to present environmental news in "perhaps more meaningful ways" -- an increased complexity of coverage, and inclusion of more economic/developmental coverage. Howenstine also reported the story bias shifted from environmental to neutral, which

may indicate "a more rational, balanced, or better informed approach toward environmental issues" (Howenstine, 1986, p. 846).

Where Environmental News Comes From

Witt (1974) found most environmental reporters get most of their news from conservation clubs and organizations and from governmental conservation agencies. These were followed closely by business and industry sources. Reporters gather most of their news through personal contact with individuals, from news releases, and from a variety of printed reports. Witt's national survey of newspapers also found that respondents generally complained about far too much "crisis" reporting and too little interest in following developing stories through time. Respondents considered follow-up particularly important because of the complexity and duration of most environmental problems.

VanSlyke-Turk's (1986) research into public relations' influence on the news also revealed that public information offices (PIO) of governmental agencies do have some influence on the media's agenda and its construction of reality. Journalists interviewed said their decisions to use information from PIO sources were heavily influenced by craft norms of newsworthiness and by staff and space availability to "massage" that information into news copy. She suggested there are multiple influences on the media

agenda, and further research into the relative contributions of the many factors might aid in understanding media construction of reality (VanSlyke-Turk, 1986, p. 15).

Chapter 3

Methodology

A content analysis was conducted on news stories, editorials, and letters to the editor published on the topic of Cheyenne Bottoms in five area daily newspapers in 1984, 1985, and 1986.

The population chosen for this study was those daily newspapers within a 60-mile radius of Cheyenne Bottoms with circulations greater than 10,000. Because articles did not appear with enough consistency to allow accurate random sampling, a census was conducted of the population of newspapers for the years indicated. The population included: The Wichita Eagle-Beacon; The Great Bend Tribune; The Hutchinson News; The Hays Daily News; and The Salina Journal. Microfilm of The Hays Daily News and The Salina Journal was made available for analysis through Farrell Library's (KSU) Interlibrary Loan Department. The researcher analysed microfilm of the other newspapers in the public libraries of Wichita, Great Bend, and Hutchinson.

In the content analysis presented in this study, attention was focused on stories published on the topic. Specifically, the unit of analysis was any article, column, editorial, or letter to the editor which included a line of copy or more about the issues related to Cheyenne Bottoms, listed in categories below.

The categories for analysis were constructed as follows. A focus group consisting of four key individuals was interviewed to identify and define key issues associated with Cheyenne Bottoms. Each of these four people, who had worked closely with the refuge, represented a different interest in the area. The group of four (See Appendix A) consisted of representatives from: 1) a governmental agency (Kansas Department of Wildlife and Parks); 2) the agricultural irrigation industry (a local irrigator who was also a board member of the Kansas Water Authority); 3) environmentalists (the Kansas Audubon Council member who coordinated the "Save the Bottoms" campaign); and 4) business/economic concerns (Great Bend Chamber of Commerce).

Each interviewee was asked to pinpoint the top five or ten key issues involved with Cheyenne Bottoms. These issues were then considered the categories for analysis -- the standards against which the media content were measured. The categories identified were: Funding; Irrigation; Lack of Water to Maintain the Marsh; Decreasing Wetland Habitat in North America; Impact on Endangered Species/Migratory Waterfowl; Wildlife Biology Research; Economic Impact in the Region; Hunting; Birdwatching; Marsh Management Practices; Water Storage Possibilities; and Public Awareness. Another category -- "Save the Cheyenne Bottoms" campaign -- was added to this list in order to

measure the frequency with which it was mentioned in the news.

Coding sheets (See Appendix C) were developed which were used in the content analysis of the census of the newspaper population. In addition to listing the identified categories, each sheet allowed for the identification of the given newspaper, the date of each article's publication, the number of lines of copy given to each category, and the story's placement in the paper. Opinion pieces (editorials, columns, and letters to the editor) were coded separately to maintain their distinction from news stories. For reliability, this coding system was pretested with three coders and showed an average reliability of .90 across the variables (using the formula M/N = Reliability where M = number of intercoder agreements and N = number of possible agreements).

The categories were then ranked by relative importance. The four experts agreed unanimously that all of the issues were important; however, they were reluctant to assign more importance to one issue over another. Therefore, so that the categories could be ranked, a population of 10 others (See Appendix A), who were knowledgeable about Cheyenne Bottoms, was surveyed by mail. These individuals, who also represented different interest areas, were asked to assign importance to the categories by means of Likert scales.

Implementation of the Survey

Once the survey population was identified, questionnaires were mailed with cover letters and self-addressed, stamped envelopes on May 11-12, 1988, (See Appendix B) with a cutoff for return of June 1, 1988. As the completed questionnaires were received they were analysed statistically.

The questionnaires were also sorted into two general groups -- those with strong environmentalist/wildlife interests, and those with agricultural/water resources interests -- for further analysis. The distinction was made as follows. Those individuals who work in biology, natural resources and wildlife associations were considered to have strong environmentalist/wildlife interests; those who work for the Board of Agriculture and the state water office were considered to have stronger agricultural/water resources interests.

Treatment of the Collected Data

After coding of the newspapers was complete and the returned questionnaires were ready for analysis, quantification was done to show frequencies at the nominal and ordinal levels. Data from the study of newspapers were analysed to show:

1. Total number of lines of copy published about each category;

2. Number of lines per category per newspaper in the population;
3. Number of units of analysis (articles, editorials, letters, etc.) per month and per year;
4. Where the items were placed in the papers.

Data from the Likert scales of the survey were analysed to show:

1. Friedman Test of experts' rankings of the categories;
2. Correlations between the experts' rankings of the variables -- Spearman's Rank Order;
3. Total rank sums of the experts' rankings of the variables;
4. Average ranking of categories; and
5. Average ranking of categories by split group (environmentalist/water resources groups), and variance between rankings by the two groups.

Next, a chi-square test was run which compared rankings by experts and newspapers with a mathematical expectation.

Chapter 4

ANALYSIS OF DATA

In this chapter are described: 1) the compilation of data, and 2) discussion of findings.

Compilation of Data

The frequencies from the coding worksheets were tabulated and quantified for analysis, correlations from the survey questionnaires were calculated by the Spearman's Rank Order and the Friedman Tests, and a chi-square test was run.

To arrive at the ranking and correlation of each category, results of the experts' marking of Likert scales (0 - 10) for each category were analysed with the Friedman Test of rank sums. Rank sums were then divided by the number of experts to yield average ranking per category.

Discussion of Findings

Ninety percent (9/10) of the questionnaires were returned from the population of experts.

What the Experts Said

The results of the experts' rankings of the variables are in Tables 1 and 2.

The experts did not agree on the relative importance of the issues associated with Cheyenne Bottoms. The data

indicate that significant difference does exist in the individual experts' ranking of the individual categories, but the extremes cancelled each other out statistically, leaving no significant difference overall.

Experts as a group considered Impact on Migratory Waterfowl/Endangered Species the most important category associated with Cheyenne Bottoms (average rank of 9.0), followed by: Funding (8.7); Marsh Management (8.6); Decreasing Wetland Habitat in North America (8.3); Wildlife Biology Research (7.5); Birdwatching (7.1); Economic Impact in the Region (6.1); Hunting (6.0); Lack of Water (5.6); Water Storage (3.7); and Irrigation (2.8), in descending order of importance as shown in Table 1.

The experts' data also was examined by area of interest. The group of returned questionnaires was divided into two groups: one representative of environmentalist/wildlife interests (n=5); the other more representative of agricultural/water resources interests (n=4).

Differences are apparent in how the groups ranked the categories, although no significant differences existed. Individual personal bias may have been a factor in the differences. For example, the environmentalist group perceived Decreasing Wetland Habitat as the most important category followed closely by Funding and Impact on Species. The water resources group identified Impact on Species as the most important category followed by Marsh Management

Table 1

Average Values of Categories by Experts -- Friedman Test
(Based on Likert Scale Values 0 - 10)

Category	Average Importance Value (descending order)
Impact on Migratory Species	9.0
Funding	8.7
Marsh Management	8.6
Decreasing Wetlands	8.3
Public Awareness	7.6
Wildlife Research	7.5
Birdwatching	7.1
Economic Impact	6.1
Hunting	6.0
Lack of Water	5.6
Water Storage	3.7
Irrigation	2.8

Table 2

Average Values of Categories by Split Group of Experts Based on Likert Scale Values (0 - 10)

Category	Average Importance Value	
	Environmentalists	Water Resources Group
Hunting	4.8	7.3
Funding	9.2	7.8
Decreasing Wetlands	9.4	6.8
Wildlife Research	7.8	7.0
Irrigation	3.6	1.3
Economic Impact	7.2	4.8
Impact on Species	9.0	8.8
Marsh Management	8.4	8.3
Birdwatching	7.4	6.5
Public Awareness	8.0	6.5
Water Storage	8.4	3.5
Lack of Water	6.6	4.0

and Funding. The environmentalist group assigned generally higher values to all categories than the water resources group with the exception of the Hunting category. Public Awareness ranked higher among environmentalists, and Irrigation ranked lowest in importance for both groups.

In the Spearman's Rank Order Test, significant difference existed between experts and how they ranked the variables (categories). The data yielded a critical value for correlations of .59. The correlation ranges used for analysis were: >.60 = strongly correlated; .30-.60 = moderately correlated; and < .30 = not correlated (random).

For example, based on this test, the correlation table (Table 3) shows those who considered the category of Hunting important had a moderate correlation with Marsh Management and Birdwatching (they considered them moderately important), but had no more than random correlation with Wildlife Research, Impact on Waterfowl, Water Storage, and Lack of Water. They did have strongly opposite correlation with Funding, Decreasing Wetlands, Irrigation, Economic Impact, and Public Awareness. Significant difference existed between their ranking of some categories such as Wildlife Research and Irrigation, and Marsh Management and Economic Impact, for instance.

Another example from Table 3 indicates those individuals who considered the top-ranking category of Impact on Migratory Waterfowl important also considered Birdwatching,

Table 3

Correlation Table Resulting from Experts' Rankings of Variables -- Spearman's Rank Order

Category	Hunting	Funding	Decreasing Wetlands	Wildlife Research	Irrigation	Economic Impact	Impact on Wildlife	Marsh Management Practices	Birdwatching	Public Awareness	Water Storage Possibilities	Lack of Water
Hunting	1.000											
Funding	-.307	1.000										
Decreasing Wetlands	-.028	.378	1.000									
Wildlife Research	.264	.323	.238	1.000								
Irrigation	-.407	-.387	-.188	-.692	1.000							
Economic Impact	-.302	.040	.070	.900	-.081	1.000						
Impact on waterfowl	.284	.899	.717	.902	-.894	.256	1.000					
Marsh Management	.401	-.073	.309	.619	-.180	.412	.949	1.000				
Birdwatching	.314	.042	.484	.699	-.317	.247	.740	.678	1.000			
Public Awareness	-.043	-.334	.238	-.189	.879	-.301	-.078	.089	.143	1.000		
Water Storage	.252	.187	.476	.722	-.087	.825	.985	.789	.877	.358	1.000	
Lack of Water	.000	307	.843	.308	.052	.194	.282	.059	.032	.499	.859	1.000

Research, and Decreasing Habitat highly important, and they considered Funding, Management Practices, and Water Storage moderately important. However, they showed a strongly opposite correlation with Public Awareness and Irrigation, and significant difference existed between their rankings of Birdwatching and Public Awareness, for example.

The category of Lack of Water to Maintain the Marsh was considered important by those who also considered Water Storage important, but was only moderately important to those who thought Funding, Decreasing Habitat, Research, and Public Awareness important; it had no correlation with any others.

What the Newspapers Published

Table 4 depicts how much each paper published about each category, and it makes the distinction between news stories, editorials, and letters to the editor. For example, the Wichita Eagle-Beacon published 39 lines of copy on the category Funding, 24 lines of news and 12 lines of editorial on Irrigation, etc. And the Great Bend Tribune, for instance, published seven lines of news on Funding, but included four lines of editorial and nine lines of letters to the editor about that category.

Totals for each category and each newspaper are included in the table. Because this study focused on all copy relevant to the problem in the five selected area

newspapers, the differences are real differences, not probabilities of significant differences, which would be based on a sample of the population.

This analysis of newspapers showed the papers published more content on the category of Impact on Migratory Waterfowl/Endangered Species (261 lines of copy) than any other category, as shown in Table 4. This category, then, was called the newspapers' number one ranking, and was followed by: Lack of Water to Maintain the Marsh; Hunting; Decreasing Wetland Habitat; Birdwatching; Marsh Management Practices; Funding; Irrigation; (Save the Bottoms Campaign); Public Awareness; Water Storage Possibilities; Economic Impact on the Region; and Wildlife Biology Research.

Also, as Table 4 shows, specific papers varied in their emphasis of coverage. The Great Bend Tribune, for example, which published the largest number of items on the Bottoms, also devoted more space to the issues of Birdwatching and Economic Impact. This is might be attributed to its proximity to the area. Interestingly, it neglected the broad category of Public Awareness, but reported the Save the Cheyenne Bottoms campaign, which was reported by every paper. The Salina Journal appeared to emphasize the more general issue of Decreasing Wetlands in North America.

Table 4

Number of Lines of Copy per Category per Newspaper

Category	Rank	Newspaper* W.E.B	G.B.T.	H.D.N.	S.J.	H.N.	Total
Funding	7	**39	7(4)<9>	24	42	34	(4)<9>104
Irrigation	8	24(12)	4	12	21	36	(12) 97
Lack of Water	2	38(20)	29	48	57	57	(20) 227
Decreasing Wetlands	4	14(04)	14	36	50	24	(04) 138
Impact on Species	1	36(24)	46	34	85	80	(24) 261
Biology Research	13	0	0	7	7	0	14
Economic Impact	12	0	25	3	10	3	41
Hunting	3	38	47	22	38	38	179
Birdwatching	5	19	39	12	26	28	124
Management Pract.	8	25	24	24	8	23	104
Water Storage	11	4	10	9	2	17	42
Public Awareness	10	16	0	4	12	23	57
Save the Bottoms	9	17(8)	18	14	10	25	84
No. Lines per paper (news)		270	283	247	418	388	1586
(Editorial)		(57)	(4)				
(Letters)			<9>				
Total No. Lines/Paper		322	276	247	418	388	1856

*W.E.B. (Wichita Eagle-Beacon)
G.B.T. (Great Bend Tribune)
H.D.N. (The Hays Daily News)
S.J. (The Salina Journal)
H.N. (The Hutchinson News)

**Figures represent number of lines of copy per given category.

() = Editorial;
<> = Letter to the Editor.

Comparing the Experts with the Newspapers

Differences existed between the experts' and newspapers' rankings of the issues (Tables 1, 2, & 4). However, based on the chi-square test, the comparisons of rankings between newspapers and experts and mathematically expected rankings only approached significant difference in the categories of Funding, Birdwatching, and Water Storage. Still, the comparison yielded no significant difference between any rankings. This might be attributed to the small size of comparisons; statistical probability of significant differences depicted only random differences.

The experts as a group identified Impact on Migratory Waterfowl/Endangered Species as the most important category associated with Cheyenne Bottoms (average rank of 9). Analysis of newspapers showed the papers published more about this category than any other category. Experts ranked Decreasing Wetland Habitat fourth; content for this category also ranked fourth. The experts assigned equal importance (5) to the categories of Wildlife Biology and Public Awareness; content of these categories ranked 12 and nine respectively. Whereas experts ranked Birdwatching ahead of Hunting, the category of Birdwatching was given less space in the papers than Hunting. The experts also placed a higher emphasis on Funding and Economic Impact than the frequencies in the papers depicted. And

interestingly, while the experts ranked ninth Lack of Water to Maintain the Marsh, it ranked second in newspaper content. Finally, neither of the split groups' rankings agree with more than two of the top five rankings which appeared in print.

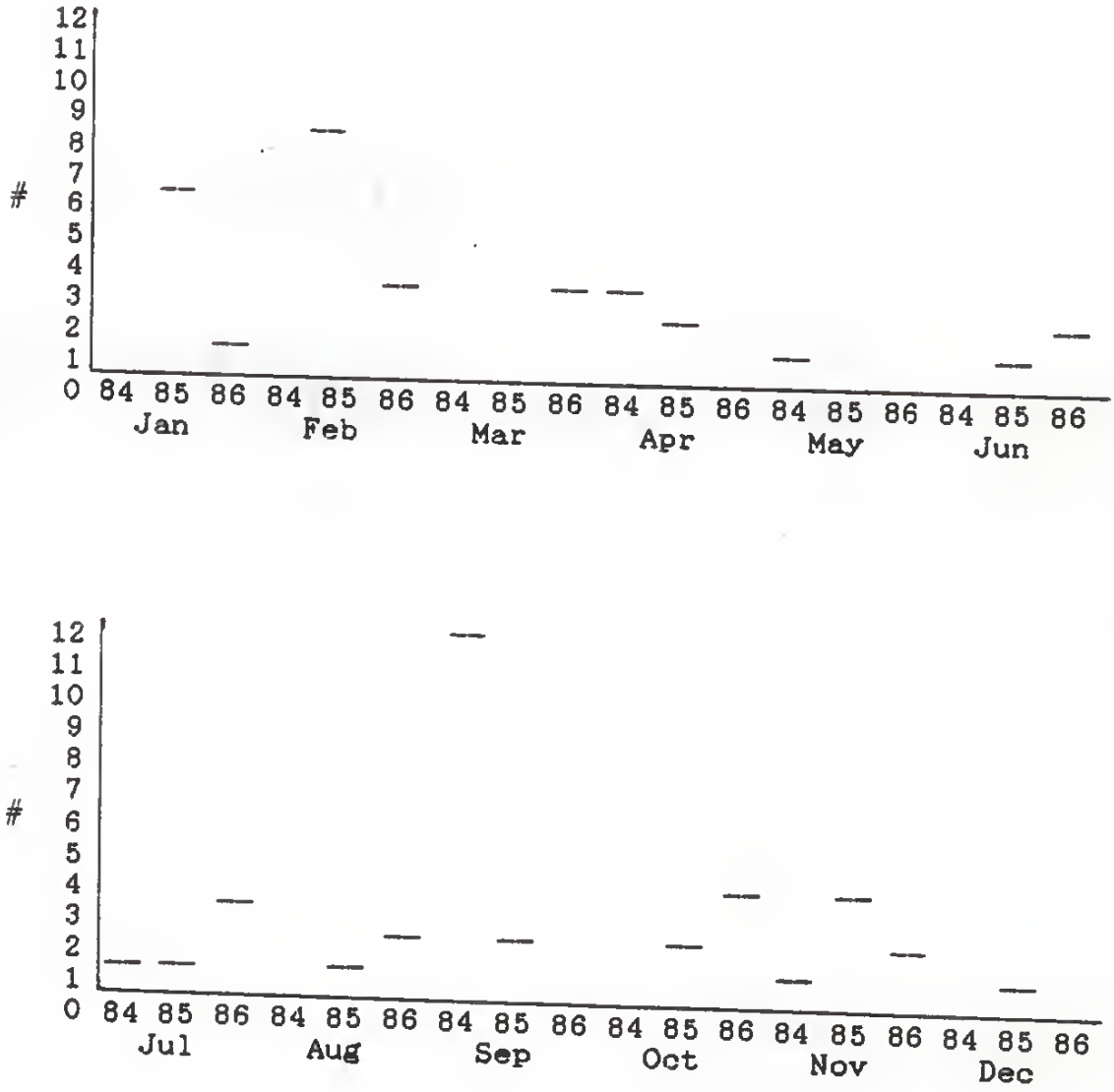
When Items Were Published

Figure 1 shows the frequency with which items appeared in the newspapers about Cheyenne Bottoms. More items (12) were published in September 1984 than at any other time. January and February 1985 also show relatively high coverage. Coverage was generally moderate in the spring and fall, and some items were published in June and July.

The prevalence of items published in September 1984 might represent the public relations effort announcing the Save the Bottoms Day at that time. The next highest peak occurred in February 1985. These two peaks could represent the times of the most intense public awareness efforts of the Save the Bottoms group. This peak period is also when the editorials and letters to the editor were published. Announcements about the migration and hunting season made in the springs and falls account for some of the coverage then. Some of the items published in June and July were updates on the status of the marsh during dry weather.

Figure 1

Number of Items Published per Month and Year



Placement of Cheyenne Bottoms Items

Fourteen of the stories about Cheyenne Bottoms appeared on the front page of the newspapers studied, as shown in Table 5. Twenty-one were published in the Local/State pages, six on the opinion-editorial pages, five were placed elsewhere in the front sections (buried), and 20 appeared in the sports section, for a total of 66 items published. Table 5 shows not only the totals, but also the individual papers' placement of items.

The data concerning placement of stories at first glance depicted an indecisisiveness about what kind of story Cheyenne Bottoms is. For example, more stories appeared in the front sections of the papers than in the sports section, although many did appear in the sports section, particularly in The Salina Journal. Many of the stories in the sports section, however, mentioned individual categories instead of the problems of Cheyenne Bottoms. For instance, many seasonal sports stories included mentions of the arrival of migratory waterfowl in hunting season or the sightings of endangered species which birdwatchers would want to see.

Another effect on placement could be attributed to the employment of, or lack of employment of environmental writers by these papers. Sunday editions of the Wichita Eagle-Beacon, The Hutchinson News, and the Salina Journal (since 1985) regularly feature outdoors writers' columns in

Table 5

Placement of Cheyenne Bottoms Items in Newspapers

	Newspaper*					
	W.E.B	G.B.T.	H.D.N.	S.J.	H.N.	Total
Front Page	1	9	0	1	3	14
Local/State	2	5	4	6	4	21
Op-Ed	2	4	0	0	0	6
Buried (but not in Sports)	0	3	1	1	0	5
Sports Section (Front)	2	1	0	3	0	6
Buried (in Sports)	0	1	2	10	1	14
Totals	7	23	7	21	8	66

*WEB = Wichita Eagle Beacon; *GBT = Great Bend Tribune;
*HDN = The Hays Daily News; *SJ = The Salina Journal;
*HN = The Hutchinson News

the sports sections. The Hays Daily News sometimes published an outdoors column, but not on a regular basis, and the Great Bend Tribune had no outdoors writer. Papers employing regularly contributing outdoors writers might give more attention to the topic in the sports news space than those without outdoors writers.

A major factor affecting both the frequency and placement of stories about the topic might be the nature and importance of other news during the time studied. Major international, national, or local news might have displaced or replaced items about Cheyenne Bottoms. For example, some of the major news of the period covered by these papers included the 1984 presidential election, the Kansas gubernatorial election, the space shuttle Challenger tragedy, and local news such as local elections, a county commissioner's suicide in Salina, plus countless other stories.

Although The Hays Daily News published less about Cheyenne Bottoms than other papers, it covered the water shortage problem of Western Kansas with regularity. It focused more on problems of Cedar Bluffs Reservoir than on Cheyenne Bottoms. Also, the city of Hays embarked on a water conservation program, which received a considerable amount of attention in the newspaper including a weekly story updating citizens' progress toward conservation. This, as well as the above mentioned news competed with the

Cheyenne Bottoms story for space, and might help explain when and where stories were placed if they were to be run at all. (It is worth noting here that The Hays Daily News published more about the category of Lack of Water to Maintain the Marsh than any other category).

Chapter 5

SUMMARY AND CONCLUSIONS

The purpose of this study was to examine media coverage of an environmental/natural resources problem.

Specifically, a content analysis was conducted to compare what was reported in area newspapers about Cheyenne Bottoms Waterfowl Management Area with what a group of experts identified as the key issues pertaining to the wetland area.

Categories for analysis were identified by a focus group of experts and ranked by importance by a survey of 10 other experts, of which nine responded. The categories identified and their rankings in descending order were: 1) Endangered species/migratory waterfowl/shorebirds; 2) Funding; 3) Marsh management practices; 4) Decreasing wetland habitat in North America; 5) Public awareness; 6) Wildlife biology research; 7) Birdwatching; 8) Economic impact in the region; 9) Hunting; 10) Lack of water to maintain the marsh; 11) Water storage possibilities; and 12) Irrigation. Another category -- "Save the Cheyenne Bottoms" campaign -- was added to this list in order to measure the frequency with which it was mentioned in the news.

Three years (1984-1986) of five area newspapers were analysed for content about these categories, and the data were compared with the data yielded by the survey of the

experts. To arrive at that comparison, findings included: total number of lines of copy published about each category; number of lines per category per newspaper in the population; number of units of analysis (articles, editorials, letters, etc.) per month and per year; where the items were placed in the papers; correlations between the experts' rankings of the issues; rankings of issues by split group (environmentalist/water resources groups). A chi-square test was run which compared rankings by experts and newspapers with a mathematical expectation.

Conclusions

The following conclusions about area newspaper treatment of the Cheyenne Bottoms issues are supported by this study.

1. As a group, the experts considered the issue of Impact on Endangered Species/Migratory Waterfowl the most important issue, but as individuals, they varied enough in their rankings to yield significant differences in levels of importance of the issues.
2. Personal bias may have affected the experts' opinions, and may have partially caused the discrepancies in rankings.
3. Individual newspapers appeared to agree with the experts that the issue of Impact on Endangered Species/Migratory Waterfowl was most important, although not every paper deemed it the most important issue. As a

group, however, the papers did publish more about Impact on Endangered Species/Migratory Waterfowl than about any other issue.

4. The newspapers collectively reported all of the issues identified by the experts. Three papers, however, reported nothing about wildlife biology research, a category which both groups of experts considered somewhat important.

5. The individual newspapers appeared generally to assign similar relative importance to each issue, with some exceptions. Generally, agreement on levels of importance seemed more apparent among newspapers than among experts.

6. A relationship seemed to emerge between the Save the Cheyenne Bottoms public relations effort and mentions of the campaign in the papers. Although the data do not prove this relationship, it appeared as a possibility.

Recommendations for Further Study

The study of several related research questions might prove fruitful. Among them are:

1. What was the relationship between the Save the Cheyenne Bottoms public relations effort and media treatment of the Cheyenne Bottoms issues?

2. Where did the newspapers get their information for stories and editorials about Cheyenne Bottoms?

3. What issues might the newspapers have addressed other than those identified by the experts? Did each paper set

an agenda different than what the experts deemed important?

4. This study focused on one case -- Cheyenne Bottoms. It might be considered a pilot study for broader research into media coverage of the national problem of decreasing wetlands specifically, or of other, more general environmental problems.

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APPENDIX A

LIST OF EXPERTS

LIST OF EXPERTS

Jan Garton
Coordinator
Saving Cheyenne Bottoms
219 Westwood
Manhattan, Kansas 66502
913-539-3004

Marvin Schwilling
Director
Non-game Wildlife Program
Department of Wildlife and Parks
Emporia, Kansas 66801
316-342-0658

Larry Panning
Board Member, District 5
Kansas Water Authority
Ellinwood, Kansas 67526
316-564-2199

Chris Collier
Staff Member
Great Bend Chamber of Commerce
1307 Williams
Great Bend, Kansas 67530
316-792-2401

Kerry Wedel
Water Resources Planner
Kansas Water Office
Suite 200
109 S.W. 9th Street
Topeka, Kansas 66612

Joel Wentz
Water Resources Manager
Kansas Water Office
Suite 200
109 S.W. 9th Street
Topeka, Kansas 66612

Margaret Baggs
Water Resources Planner
Kansas Water Office
Suite 200
109 S.W. 9th Street
Topeka, Kansas 66612

Donald Huggins
Associate Scientist
Kansas Biological Survey
2291 Irving Hill Drive
Lawrence, Kansas 66045-2969

Paul Liechti
Assistant Director
Kansas Biological Survey
2291 Irving Hill Drive
Lawrence, Kansas 66045-2969

Ralph Brooks
Research Assistant
Kansas Biological Survey
2291 Irving Hill Drive
Lawrence, Kansas 66045-2969

Ron Henricks
Kansas Natural Resources Council
1516 Topeka Avenue
Topeka, Kansas 66612

Karl Grover
Manager, Cheyenne Bottoms
Route 3 Box 301
Great Bend, Kansas 67530

Jerry Hazlett, Director
Kansas Wildlife Federation, Inc.
Box 5715
Topeka, Kansas 66605

David Pope
Chief Engineer, Director
Water Resources Division
Board of Agriculture
109 W. 9th Street
Topeka, Kansas 66612

APPENDIX B

SURVEY QUESTIONNAIRE

May 12, 1988

Dear :

I am a graduate student at Kansas State University working on my master's research project which involves the Cheyenne Bottoms Refuge.

Would you please help me by completing the enclosed brief questionnaire and returning it to me as soon as possible?

A self-addressed, stamped envelope is enclosed.

Thank you for your help.

Sincerely,

Greg Davis
3024 Mary Kendal
Manhattan, Ks. 66502

Please place a mark on the accompanying scales according to the importance you would assign each of the following topics as they relate to Cheyenne Bottoms. (A mark near zero is low in importance; ten is high in importance).

a) hunting: [0_____10]

b) funding: [0_____10]

c) decreasing wetland habitat in North America: [0_____10]

d) wildlife biology research: [0_____10]

e) irrigation: [0_____10]

f) economic impact in the region: [0_____10]

g) impact on migratory waterfowl and/or endangered species: [0_____10]

h) marsh management practices: [0_____10]

i) birdwatching: [0_____10]

j) public awareness: [0_____10]

k) water storage possibilities: [0_____10]

l) lack of water to maintain the marsh: [0_____10]

APPENDIX C

NEWSPAPER CODING SHEET

Date	Category	Space (# lines)	Page #
	Funding		
	Irrigation		
	Lack of Water to Maintain Marsh		
	Decreasing Wetland Habitat in N. America		
	Endangered Species/ Migratory Waterfowl		
	Wildlife Biology Research		
	Economic Impact in the Region		
	Hunting		
	Birdwatching		
	Marsh Management Practices		
	Water Storage Possibilities		
	Public Awareness		
	*Save the Cheyenne Bottoms Campaign		

MEDIA TREATMENT OF AN ENVIRONMENTAL PROBLEM -- DID THEY ACCURATELY REPORT THE KEY ISSUES OF CHEYENNE BOTTOMS WATERFOWL MANAGEMENT AREA, ACCORDING TO THE EXPERTS?: A CONTENT ANALYSIS OF AREA NEWSPAPERS

by

GREGORY L. DAVIS

B. S. Horticulture, Kansas State University, 1979

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

School of Journalism and Mass Communications

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1988

Abstract

Davis, G. L., Media Treatment of an environmental problem -- did they accurately report the key issues of Cheyenne Bottoms Waterfowl Management Area, according to the experts?: A content analysis of area newspapers. M. S. Journalism and Mass Communications, 1988, Professor R. D. Bontrager.

This study compared what was reported in five area newspapers about Cheyenne Bottoms Waterfowl Management Area with what a group of experts identified as the key issues pertaining to the troubled wetland area. A focus group of four experts representing differing interest areas identified 12 pertinent issues for analysis. Ten other experts were surveyed with a return rate of 90 percent to arrive at rankings for the issues. Three years (1984-88) of the newspapers were analysed for content of those issues. As a group, the experts agreed on the most important issue, but as individuals, they varied enough in rankings to yield significant differences in the assignment of levels of importance. As a group, newspapers agreed with experts about the most important issue. Papers did report all of the issues identified by the experts, but disagreed with the experts' group rankings of most issues. The individual newspapers generally agreed with each other about relative importance of each issue, with some exceptions. Generally, agreement was more apparent among newspapers than among experts.